



Laboratory for Port Security

Mission

The Laboratory for Port Security (LPS) was established in 2006 to coordinate and carry out collaborative research on marine/land port security, as well as the security of approach roads, including bridges and tunnels, and the coastal waters that surround them. LPS addresses key issues relevant to port and bridge/tunnel security operations, coastal interdiction, preparedness and recovery from high-consequence events at ports and the surrounding transportation infrastructure; the LPS research scope also includes analysis of technological approaches, as well as modeling and evaluation of field operations.

Security operations must strike a balance between providing security and impeding the movement of cargo with the attendant economic costs. To this end, LPS researchers are developing detailed simulation models to assess the efficiency and effectiveness of security field operations, and to aid decision makers in quantifying the trade-off between achieving security goals and their attendant costs, as well as providing feedback for devising improved operations. Such models can assist in analyzing the disruptive impact of high-consequence events in and around port complexes, as well as assessing the effectiveness of strategies to mitigate and recover from such events. In a parallel thrust, LPS researchers are developing decision support algorithms to determine inspection strategies for optimizing our ability to intercept illicit materials and weapons subject to limits on delays, manpower, and equipment.

LPS teams are working with the Area Maritime Security Committees to initiate maritime risk analysis projects for both Delaware River/Port Philadelphia region and the New York Harbor. The objective of these studies is to focus on the dangerous cargo traffic and develop policies of operation to mitigate the risks involved in these ports. To this end, the New Jersey Department of Transportation (NJDOT) is funding LPS to model and study the risks involved in the maritime vessel traffic in the Delaware River and Bay Area.

Benefit: *Seaports are the gateway to our nation's economy. According to GAO (General Accounting Office) reports as much as 95% of foreign trade from outside North America and virtually 100% of key commodities (such as oil) enters the country through seaports. The proximity to urban centers and the volume and diversity of seaport activities make seaports vulnerable targets, where even small incidents could have crippling effects. LPS is building systems to help understand and mitigate the impact of events at ports.*

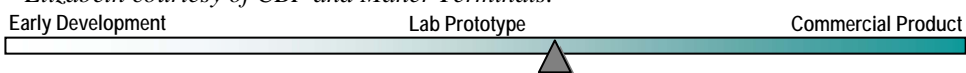
Collaborator(s):

- US Customs and Border Protection
- US Coast Guard
- NJ Department of Transportation
- Rutgers University:
 - Center for Discrete Mathematics and theoretical Computer Science (DIMACS)
 - Center for Advanced Infrastructure and Transportation (CAIT)

Funded by: *New Jersey Department of Transportation, US Bureau of Customs and Border Protection, National Science Foundation, Office of Naval Research, and Rutgers University Academic Excellence Program*



The LPS team received briefings on port security problems and took a tour of the Port of Philadelphia on a Coast Guard vessel at the invitation of the Captain of Port. The tour included a container port, hazardous LNG and butane facilities along the waterfront, a view of Port infrastructure. The team also toured the Port of Newark-Elizabeth courtesy of CBP and Maher Terminals.



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